

Golden
Empire
Amateur
Radio
Society, Inc.

"Dedicated to Public Service"

THE RADIATOR

W6RHC
IRLP #8170

www.gearsw6rhc.org

P.O.Box 202 Chico, CA 95927

October 2020 Newsletter

GEARS Founded August 13, 1939

We will hold the October GEARS and board meeting online by Zoom. Watch your email for a link and phone number. We look forward to face to face meetings again when it's safe to do so.

It's time to nominate new officers for GEARS next year. If you would like to serve as an officer or on our Board of Directors, please let me know.

Michael Favor N6FAV and Vince Erickson KN6JFG worked on the GEARS west repeater. It is now back in full service. They also reinstalled the 12 batteries on to metal shelves for better utilization of space. We originally had 20 batteries, this is more than needed so the extra ones have been put in storage for the time being.

Tom Rider W6JS is offering VEC testing at an outdoor location, call him for an appointment 514-9211.

Several ARES members have been helping with the Bear Fire evacuees, Dale Anderson KK6EVX, Richard Astley N3UOR and Kent Hastings WA6ZFY. We all thank them for their service.

Richard Astley N3UOR has offered to host the GEARS website on his server. I appreciate his hard work keeping our website active.

October birthday wishes to Howard Bielich KC9VAZ, Michael Favor N6FAV, Keith Harris, Tom Rider W6JS, Stephen Wolske KF6HSS and yours truly K6EST.

Please try to participate in the local nets, while we can't meet in person, at least we can get together by radio.




'73
Jim Matthews K6EST
jiminchico@yahoo.com
530-893-3314



Join GEARS on Facebook
www.facebook.com For timely
news and additional information.

October 2020 Calendar

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 7pm PARS Net 7:30pm Simplex Net	2	3
4 8pm OARS Net VEC Test Chico	5 7pm GARS Net 8pm ARES Net	6 7:30pm GEARS Net	7	8 7pm PARS Net 7:30pm Simplex Net	9 7pm GARS & OARS Meetings	10 GEARS Board Meeting online
11 8pm OARS Net	12 7pm GARS Net 8pm ARES Net	13 7:30pm GEARS Net	14	15 7pm PARS Net 7:30pm Simplex Net	16 7pm GEARS Meeting online	17
18 8pm OARS Net	19 7pm GARS Net 8pm ARES Net	20 7pm ARES meeting 7:30pm GEARS Net	21	22 7pm PARS Net 7:30pm Simplex Net	23	24 9am OARS Breakfast
25 8pm OARS Net	26 7pm GARS Net 8pm ARES Net	27 7:30pm GEARS Net	28	29 7pm PARS Net 7:30pm Simplex Ne	30	31 

VEC Testing, FCC License Exam available by appointment. For information or registration call Tom Rider, W6JS 514-9211

Chico Breakfast Canceled until things settle down with the COVID-19 virus.

GEARS Board Meeting 2nd Saturday online.

OARS Meeting Second Friday of the month, TBD (To Be Determined)

GARS Meeting Second Friday of the month, TBD

Butte ARES Meeting 3rd Tuesday, TBD Contact Dale Anderson, KK6EVX 826-3461 for more information.

GEARS Meeting, third Friday of the month, online till further notice pm, meeting at 7:00 pm.

OARS Breakfast 4th Saturday of the month TBD

NETS:

OARS Club Net Sunday 8pm 146.655 Mhz - PL 136.5

GARS Club Net: Monday, 7:00 pm 147.105 MHz + PL 110.09

Butte ARES Net Mondays 8pm 145.290 MHz - PL 110.9

Yuba Sutter Club Net Monday 7pm 146.085 MHz + PL 127.3

GEARS Club Net Tuesdays 7:30 PM 146.850 MHz - PL 110.9

PARS Club Net Thursday 7pm 145.290 - PL 110.9

Simplex Net Thursday 7:30 p.m. 146.52 no tone

Yuba Sutter ARES Net Thursdays 7pm 146.085 MHz + PL 127.3

Sacramento Valley Traffic Net Nightly 9:00 PM 146.850 MHz - PL 110.9

Mt. St. John

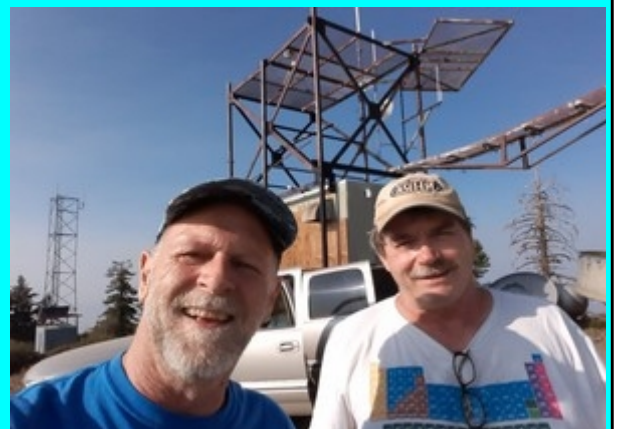
Our repeater on Mt. St. John is now back to full service.

Michael Favor N6FAV and Vince Erickson KN6JFG worked on the mountain. They have moved the batteries to a shelf for better space utilization in the building.

You should be able to work the repeater in the valley from a handheld radio.

145.410 Mhz PL is 123.0 Negative offset.

PL both input and output (CTSS)



RASPBERRY PI FOR HAM RADIO

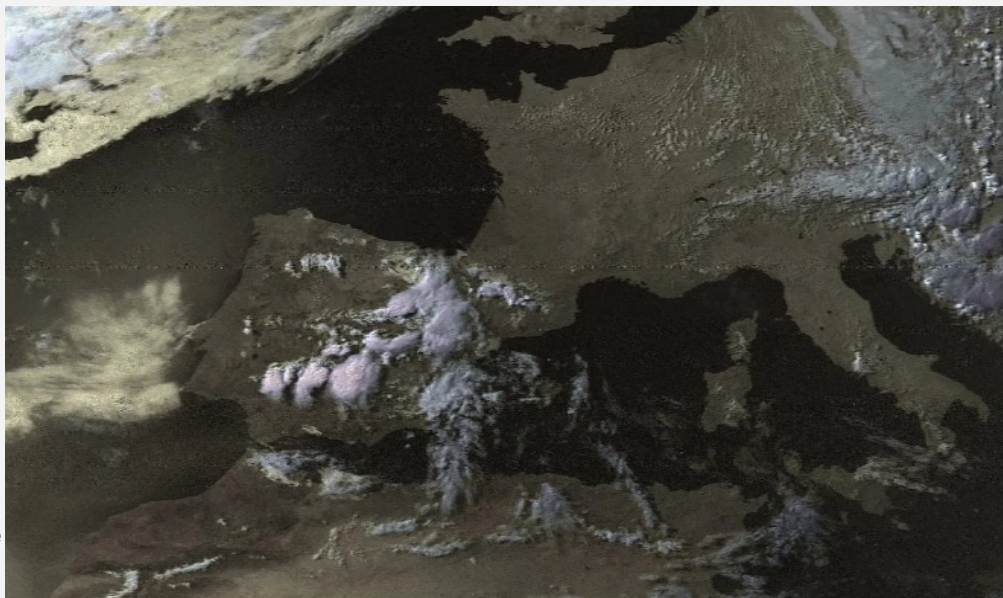
By Anthony Le Cren F4GOH

Since 2012, the Raspberry Pi nano computer has become an increasingly important part of the DIY and maker community. The increase in power of the Raspberry Pi over the years offers very interesting possibilities for radio amateurs. Indeed, it allows not to permanently monopolize a PC in the decoding of frames with software like WSJT-X, FLDIGI, etc..., without forgetting the possibility to control the Raspberry Pi remotely and thus to be able to work outside the radio shack as I can sometimes do on my couch. Moreover, this nano computer is now widely used in any Hotspot (DMR or D-STAR).

So why do so few hams use this tool? I have often asked myself this question and I think it comes from the use of the operating system (OS). When you power on a Raspberry Pi, the OS, called Raspbian is stored on a microSD card. This is a Linux distribution specially designed for the Raspberry.

When you want to install a software under Linux, you no longer have to double-click on a downloaded file like under Windows. Indeed, you often have to use the console and thus type the command lines to install or configure a program. This can seem off-putting and frankly very tedious. We are so used to using a graphical environment that we feel like we are back to the early 80's micro-computing.

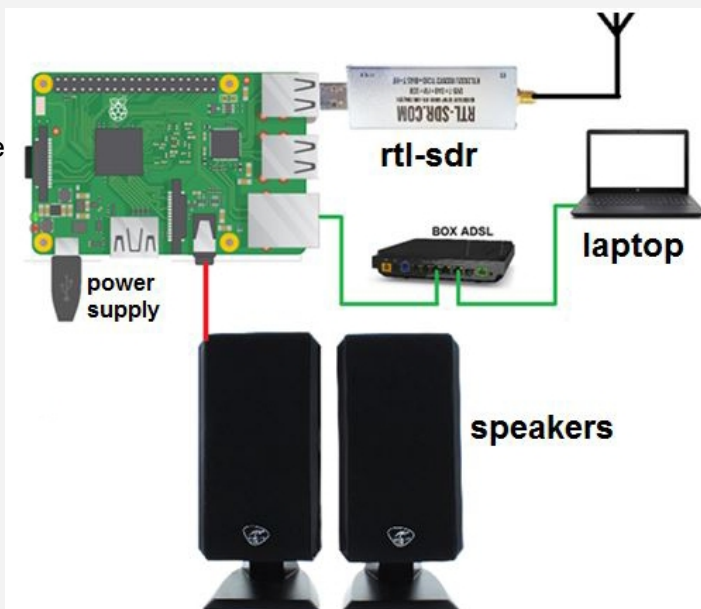
One application is to receive satellite images. The NOAA (National Oceanic and Atmospheric Administration) satellites have been in orbit for a long time. They emit continuous weather images on 137Mhz. Currently there are three (NOAA15,18 and 19), they have been joined by a Russian satellite Meteor-M2 which broadcasts color images.



The advantage of using a Raspberry Pi to receive weather images is obvious, I have no regrets about leaving it on 24 hours a day. Its software automatically updates the orbital parameters of the satellites and manages the reception and decoding of the images. Moreover, it could also decode the telemetry of cubesats. As soon as a new cubesat is in service, the update is automatic.

It's a real shame that this environment is exclusively the business of IT specialists, because it deserves to be more democratized. I have often tested installation procedures from websites or even very recent books with often very mixed success. Hence the interest of radio clubs where someone who has already done the manipulation will be able to provide help.

For the complete tutorial go to: <https://hamprojects.wordpress.com/2020/09/06/raspberry-pi-for-ham-radio/>



Magnetic Loop Antennas

Magnetic loop antennas are becoming a popular alternative to wire dipole antennas, especially on lower HF bands. As you go down in frequency a dipole needs to be higher off the ground for effective radiation. However the magnetic loop has a low angle of radiation even when it's close to the ground. Also the smaller size makes it popular for use with POA home restrictions. It can even be used on a apartment balcony.

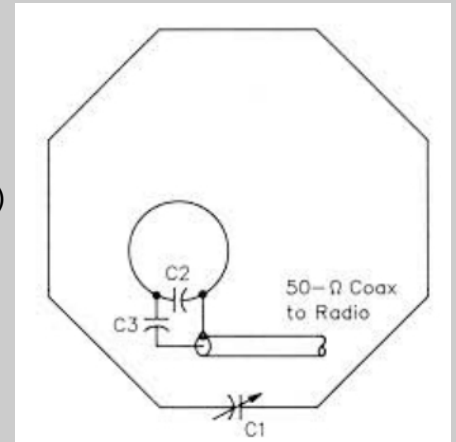
If you have ever made a QSO to an operator using an MLA I'm sure they were more than happy to tell you all about it.

The draw back of MLA is that it needs to be re-tuned whenever you change frequency on your transceiver. The frequency range over which it is resonant is very small, typically only a few hundred kilohertz at the most. For a MLA the tuning capacitor is mounted at the base of the antenna.



Commercially made magnetic loop antennas can cost up to \$600, however it's not hard to build one yourself. Hams often use 1/4" copper tubing and a variable capacitor from an old radio. The stand and frame can be made from wood and PVC pipe.

Probably the most problematic part of the MLA is the tuning capacitor. While everything else can be found in your junk box or on a shelf at the local hardware store the capacitor takes a little more digging. Ideally it should be variable from a minimum to a fairly high capacitance (0-300 pF would be good) it should also be able to withstand high voltages. If you are planning to run 100W then you could expect at least 4000 volts across the capacitor. This is not as bad as it sounds as it takes 3300 volts to jump just 1mm or .04 of an inch. Ideally you could purchase a vacuum variable capacitor, the Rolls Royce of high voltage variable capacitors. You would expect to pay anywhere from \$100 up when buying a 10 – 500 pF unit on Ebay and a LOT more if you buy new. If that is the way you want to go then great, you're all set.



So that you can tune that antenna from your shack, you'll need a motor control on the capacitor.

There are plenty of articles and YouTube videos explaining how these antennas work and how to build one.

Here are a few resources for you:

All Band MLA <http://www.stuartliss.com/N0LM/articles/All%20band%20large%20loop.pdf>

A MLA for 160 Meters: <http://www.w1npp.org/events/2010/2010-f~1/antennas/LIMITED/930603~1.PDF>

DYI Magnetic Loop: http://www.cvarc.org/resources/Tech_Articles/magnetic_loop_antenna.pdf

YouTube:

Magnetic Loop Antenna Current and Voltage Distribution <https://youtu.be/adJp1zO9qfo>

Build a 160/80 Meter MLA <https://youtu.be/AI3ZJipFq6k>

Archie's Ham Radio Adventure

By Andrew Haworth KK4DSD

When I was a kid I used to devour the old Archie "double digest" comics. Maybe it was because we are both redheads — but mostly because hanging out around the magazine and comic section of the supermarket gave me something to do while my parents were shopping.

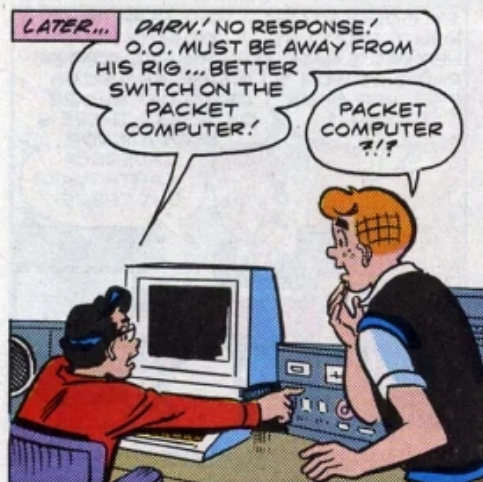
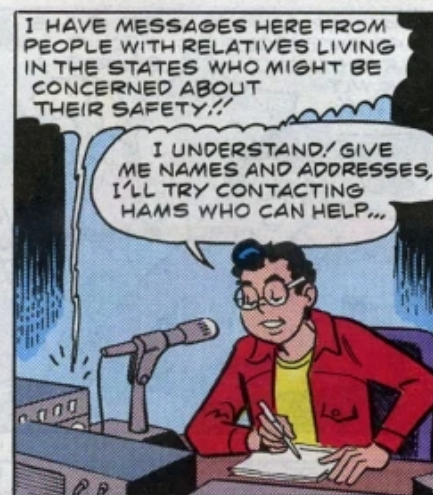
That was back in the early 1980s. I'd largely forgotten about Archie comics until Monday of this week. In the past few weeks I've started "getting into" comics and graphic novels, mainly classic superhero stuff from DC, Marvel, and various indy publishers, like Image.

Published by the ARRL around 1986, Archie's Ham Radio Adventure is a nice survey of the amateur scene of the mid-80s, apparently intended to draw young people into the hobby. The book specifically touts ham radio's role in EmComm, the then-exciting technology of packet radio, UHF and above ("1.2 gigahertz — a funny word with a big future"), space communications via OSCAR and EME, the "secret code" of CW, the inexpensive nature of the hobby (I keep hearing about how inexpensive this hobby is, lol), and of course, the ability to talk to hams around the world.

It's neat stuff, all rolled into an absurd adventure story that ends with Archie saving the day when he lobs a weighty handy-talkie at the antagonist's head. Political incorrectness also ensues "he's fast for a fatty!", the character Dilton scores points with Veronica and Betty for being a packet wizard (seriously?!?) and we learn Veronica's dad apparently has the hamshack of the gods.

I regret I never had the chance to read this when I was a kid, as it probably would have inspired me to be a ham at an earlier age, provided I could pass the code requirement of course. The ARRL did a solid job on the book, and includes a code chart on the back cover that uses the sounds (dah-dit, di-di-di-dah, etc.) rather than the common practice of dot and dash notation.

Inside the comic book was a prepaid postcard to join the Archie Radio Club which was sponsored by the ARRL. When you sent it in you got an introductory membership, a membership certificate and chart of radio bands. I wonder how many of the kids who read this comic later became hams?



Hams Help Find Kids by Monitoring FRS Radios

September 24, 2020

Late on the afternoon of September 16, the police department in Post Falls, Idaho, received a 911 call that two juveniles — ages 9 and 11 — were missing from a Post Falls residence for about an hour. According to the report, the pair had left home intending to play in the neighborhood with some Family Radio Service (FRS) radios. Several patrol cars were dispatched to the area to conduct a visual search, and detective Neil Uhrig, K7NJU, responded as officer in charge due to his training and experience with missing persons investigations. The initial search focused on a 2-mile radius from the missing kids' residence.

One officer received information from witnesses that the pair was probably using FRS Channel 1 (462.5625 MHz). An officer returned to police headquarters to retrieve some FRS radios for distribution to the patrol officers, in the event they might be able to hear the youngsters talking.

Uhrig, meanwhile, pulled out his VHF/UHF handheld with the thought of setting up FRS Channel 1 as an auxiliary frequency, but without the manual at hand, he wasn't able to execute the channel setup. But Uhrig did hear the Northwest Traffic Net (NWTN) that had begun at 6:30 PM on the local 2-meter repeater.

Checking into the net at about 6:45 PM, Uhrig explained the missing persons situation to net control station Shannon Riley, KJ7MUA, and asked if net participants in the Post Falls area with FRS capability could listen for the youngsters talking.

A number of stations promptly checked in to say they had FRS radios and were monitoring FRS Channel 1. It was assumed that only stations located near the missing youngsters would hear them, given the limited range of FRS radios.

Not long after 7 PM, Jim Hager, KJ7OTD, reported hearing children talking on FRS Channel 1. Uhrig went to Hager's home to confirm his observation, and the patrol units were redirected to the new search vicinity. A short time later, the missing pair was found safe and returned home.

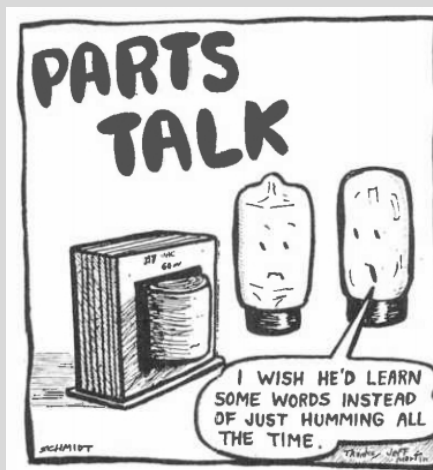
Uhrig said the most remarkable thing about the incident was that the missing youngsters were some distance from the original search area, and in the opposite direction from where it was expected they might have been headed.

Net Manager Gabbee Perry, KE7ADN, said, "I'm so proud of what a superior job NWTN NCS Shannon and all the operators did last Wednesday. It was a very unusual situation, but everyone had excellent focus and used their resourcefulness to help quickly find the missing kids."

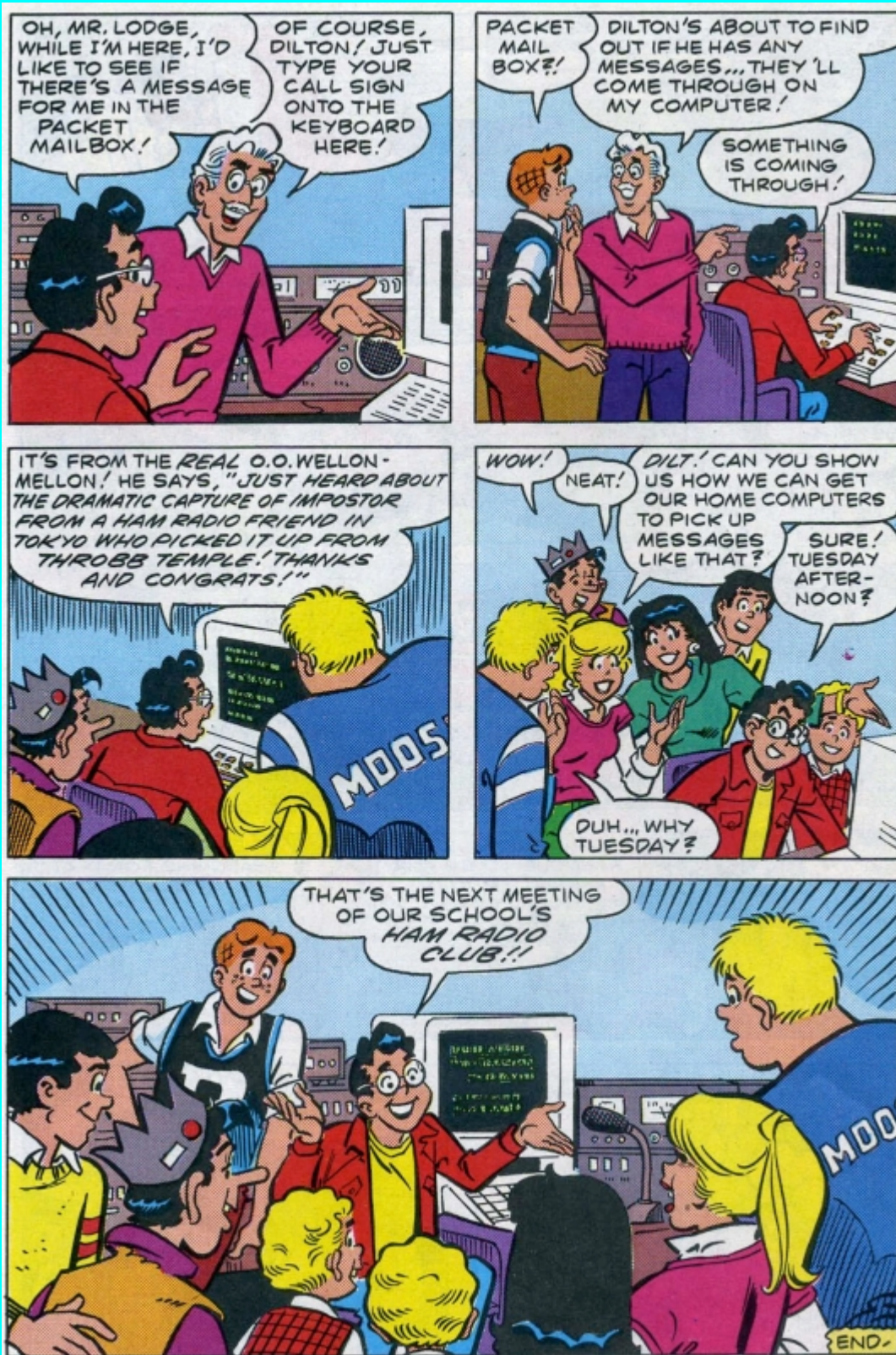
— Thanks to ARRL Assistant Idaho Section Manager Ed Stuckey, AI7H

Club Officers:

President.....	Jim Matthews, K6EST
Vice-President.....	Kent Hastings, WA6ZFY
Secretary.....	Susan Check, KE6LTY
Treasurer.....	Kathy Favor, K6FAV
Director.....	Dale Anderson, KK6EVX
Director.....	Bennett Laskey, K6CEL
Past President.....	Tom Rider, W6JS
VEC.....	Tom Rider, W6JS







Read the whole comic book at: https://kk4dsd.files.wordpress.com/2013/09/archies_ham_radio_adventure.pdf